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PLANT

HARDINESS

ZONE MAP

Miscellaneous Publication No. 814

AGRICULTURAL RESEARCH SERVICE
UNITED STATES DEPARTMENT OF AGRICULTURE

INDICATOR PLANT EXAMPLES

Following are names of representative persistent plants listed under the coldest zones in which they will normally succeed. Such plants may serve as useful indicators of the cultural possibilities of each zone.

ZONE 1 (below -50° F.)	<i>Betula glandulosa</i> <i>Empetrum nigrum</i> <i>Populus tremuloides</i> <i>Potentilla pensylvanica</i> <i>Rhododendron lapponicum</i> <i>Salix reticulata</i>	Dwarf birch Crowberry Quaking aspen Pennsylvania cinquefoil Lapland rhododendron Netleaf willow
ZONE 2 (-50° to -40° F.)	<i>Betula papyrifera</i> <i>Cornus canadensis</i> <i>Elaeagnus commutata</i> <i>Juniperus communis</i> <i>Picea glauca</i> <i>Potentilla fruticosa</i>	Paper birch Bunchberry dogwood Silverberry Common juniper White spruce Bush cinquefoil
ZONE 3 (-40° to -30° F.)	<i>Elaeagnus angustifolia</i> <i>Lonicera tatarica</i> <i>Malus baccata</i> <i>Parthenocissus quinquefolia</i> <i>Syringa vulgaris</i> <i>Thuja occidentalis</i>	Russian olive Tatarian honeysuckle Siberian crabapple Virginia creeper Common lilac American arbor-vitae
ZONE 4 (-30° to -20° F.)	<i>Berberis thunbergi</i> <i>Hydrangea paniculata</i> <i>Juniperus chinensis</i> <i>Ligustrum amurense</i> <i>Spiraea vanhouttei</i> <i>Taxus cuspidata</i>	Japanese barberry Panicle hydrangea Chinese juniper Amur River privet Vanhoutte spirea Japanese yew
ZONE 5 (-20° to -10° F.)	<i>Cornus florida</i> <i>Deutzia gracilis</i> <i>Forsythia ovata</i> <i>Ligustrum vulgare</i> <i>Parthenocissus tricuspidata</i> <i>Rosa multiflora</i>	Flowering dogwood Slender deutzia Early forsythia Common privet Boston ivy Japanese rose

ZONE 6 (-10° to 0° F.)	<i>Acer palmatum</i> <i>Buxus sempervirens</i> (6b to 7) <i>Forsythia suspensa</i> <i>Hedera helix</i> <i>Ilex opaca</i> <i>Ligustrum ovalifolium</i>	Japanese maple Common box Weeping forsythia English ivy American holly California privet
ZONE 7 (0° to 10° F.)	<i>Azalea</i> Kurume hyb. 'Hinodegiri' <i>Cedrus atlantica</i> <i>Cercis chinensis</i> <i>Chamaecyparis lawsoniana</i> <i>Cotoneaster salicifolia</i> <i>Ilex aquifolium</i>	Red Hussar azalea Atlas cedar Chinese redbud Lawson cypress Willowleaf cotoneaster English holly
ZONE 8 (10° to 20° F.)	<i>Arbutus menziesi</i> <i>Choisya ternata</i> <i>Melia azedarach</i> <i>Olearia haastii</i> <i>Prunus laurocerasus</i> <i>Viburnum tinus</i>	Pacific madrone Mexican orange Chinaberry New Zealand daisy-bush Cherry-laurel Laurestinus
ZONE 9 (20° to 30° F.)	<i>Arbutus unedo</i> <i>Eucalyptus globulus</i> <i>Grevillea robusta</i> <i>Myrtus communis</i> <i>Pittosporum tobira</i> <i>Quercus virginiana</i>	Strawberry tree Tasmanian blue gum Silk-oak Myrtle Japanese pittosporum Live oak
ZONE 10 (30° to 40° F.)	<i>Acacia baileyana</i> <i>Arecastrum romanzoffianum</i> <i>Bougainvillea spectabilis</i> <i>Casuarina equisetifolia</i> <i>Eucalyptus citriodora</i> <i>Ficus macrophylla</i>	Cootamundra wattle Queen palm Bougainvillea Horsetail beefwood (Australian pine) Lemon eucalyptus Moreton bay fig

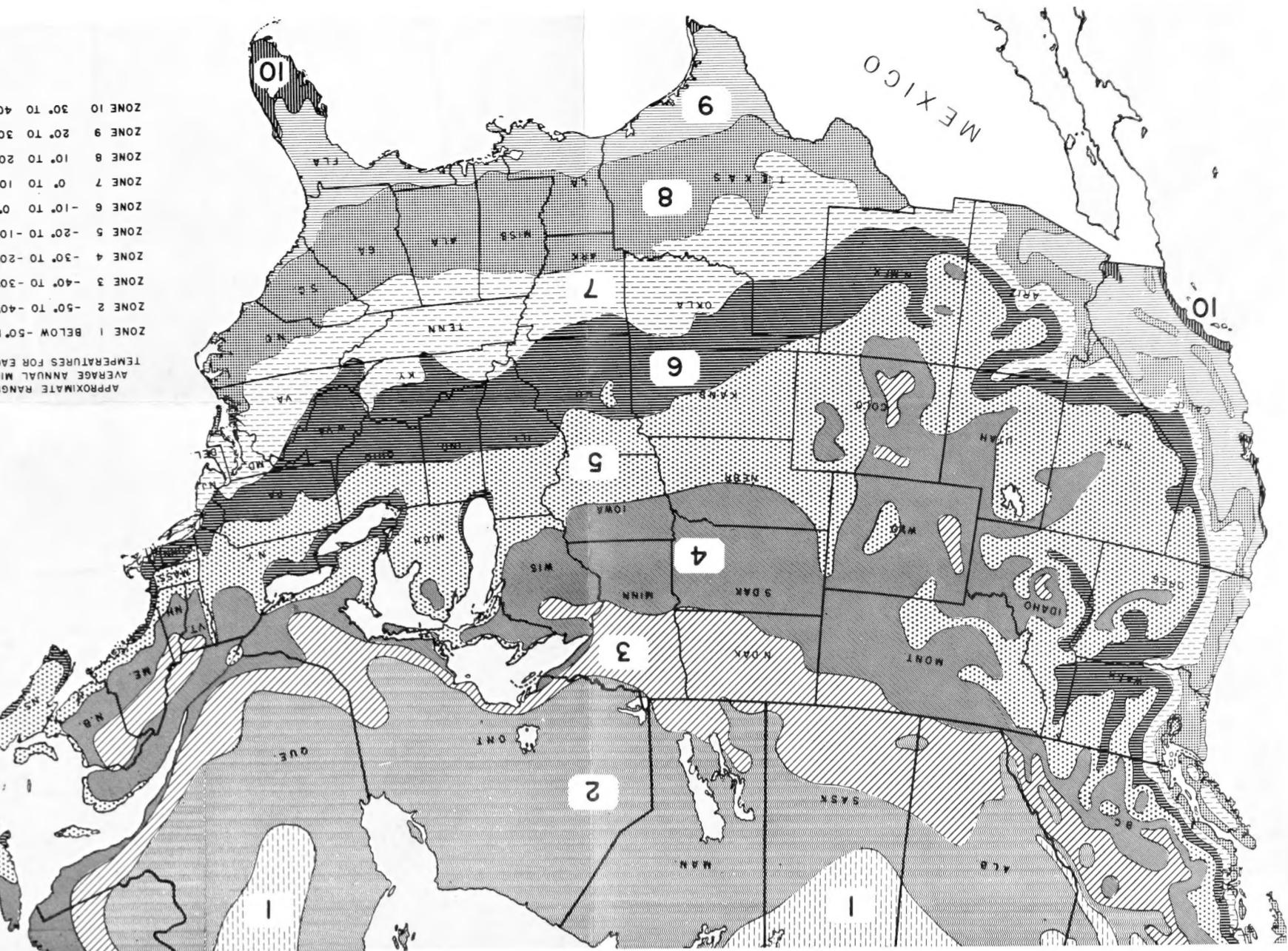
Cold Hardiness Ratings for Some Additional Woody Plants

	Zone	Zone
<i>Abeliophyllum distichum</i> (white forsythia)	5b	<i>Hypericum patulum</i> 'Hidcote' (Hidcote St. Johnswort). 7
<i>Acer platanoides</i> (Norway maple)	4	<i>Iberis sempervirens</i> (evergreen candytuft) 6
<i>Aesculus carnea</i> (red horsechesnut)	4	<i>Ilex crenata convexa</i> (convexleaf Japanese holly). 7
<i>Arctostaphylos uva-ursi</i> (bearberry)	3	<i>Jacaranda acutifolia</i> (jacaranda) 10
<i>Azalea Indian hybrid</i> (Indian azalea)	9	<i>Juglans regia</i> (English or Persian walnut) 6
<i>Azalea Kurume hybrid</i> (Kurume azalea)	7	<i>Juniperus horizontalis</i> (creeping juniper) 3
<i>Azalea Mollis hybrid</i> (Mollis azalea)	5	<i>Koelreuteria paniculata</i> (goldenrain-tree) 6
<i>Bauhinia variegata</i> (purple orchid tree)	10	<i>Laburnum watereri</i> (Waterer laburnum) 6
<i>Berberis darwini</i> (Darwin barberry)	8	<i>Lagerstroemia indica</i> (crapemyrtle) 7
<i>Betula pendula</i> (European white birch)	2	<i>Mahonia aquifolium</i> (Oregon hollygrape) 6
<i>Bouvardia 'Coral'</i> (Coral bouvardia)	9	<i>Malus arnoldiana</i> (Arnold crabapple) 5
<i>Butia capitata</i> (Pindo palm)	8b	<i>Metasequoia glyptostroboides</i> (Dawn red-wood). 5b
<i>Camellia reticulata</i> (reticulata camellia)	9	<i>Nerium oleander</i> (oleander) 8
<i>Camellia sasanqua</i> (sasanqua camellia)	7b	<i>Olea europaea</i> (common olive) 9
<i>Carya pecan</i> 'Major' (pecan)	5 (grows 6 (fruits)	<i>Picea abies</i> (Norway spruce) 2
<i>Ceanothus impressus</i> (Santa Barbara ceano-thus)	8	<i>Pieris japonica</i> (Japanese andromeda) 6
<i>Cedrus deodara</i> (deodar cedar)	7b	<i>Pinus mugo mughus</i> (Mugho pine) 3
<i>Chamaecyparis pisifera</i> (Sawara cypress)	4	<i>Pinus radiata</i> (Monterey pine) 7
<i>Cinnamomum camphora</i> (camphor tree)	9	<i>Pinus strobus</i> (white pine) 4
<i>Cistus laurifolius</i> (laurel rock-rose)	7	<i>Raphiolepis indica rosea</i> (pink raphiolepis) 8
<i>Cistus purpureus</i> (purple rock-rose)	8	<i>Rhododendron 'America'</i> (hybrid rhododendron) 5
<i>Cornus alba</i> (Tatarian dogwood)	3	<i>Rhododendron loderi</i> 'King George' (hybrid rhododendron) 8
<i>Cytisus praecox</i> (Warminster broom)	6	<i>Rhododendron 'Purple Splendor'</i> (hybrid rhododendron) 7
<i>Elaeagnus multiflora</i> (cherry multiflora)	5	<i>Rosa rugosa</i> (rugosa rose) 3
<i>Elaeagnus pungens</i> (thorny elaeagnus)	7	<i>Schinus terebinthifolius</i> (Brazilian pepper tree) 9
<i>Eriobotrya japonica</i> (loquat)	8	<i>Sequoia sempervirens</i> (redwood) 8
<i>Euonymus alatus</i> (winged euonymus)	4	<i>Sequoiadendron giganteum</i> (giant sequoia) 7
<i>Euphorbia pulcherrima</i> (poinsettia)	10	<i>Ulmus americana</i> (American elm) 2
<i>Fremontia mexicana</i> (San Diego fremontia)	9	<i>Zelkova serrata</i> (Japanese zelkova) 6
<i>Ginkgo biloba</i> (ginkgo, maidenhair-tree)	5	
<i>Hibiscus rosa-sinensis</i> (Chinese hibiscus)	9b	
<i>Hibiscus syriacus</i> (shrub althea)	6	

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The Zones of Plant Hardiness—This is an adapted version of the color map on the reverse side. It may be useful for small-scale reproduction in books, magazines, and nursery catalogs. This map is not copyrighted, and permission for reproducing it is not required.



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ANT HARDINESS ZONE MAP

Prepared by the U.S. National Arboretum, Agricultural Research Service, U.S. Department of Agriculture in cooperation with the American Horticultural Society¹

map shows in moderate detail the expected minimum temperatures of the horticulturally important areas of the United States (including Alaska and Hawaii) and Canada. It shows 10 different zones, of which represents an area of winter hardiness for certain ornamental plants.

Cold hardiness zones for the United States area of this map are based on isotherms of average minimum winter temperatures for the years 1899 through 1938. Readjustments were made for 34 States on the basis of January mean minimum temperatures for 1931 through 1937, as published by the U.S. Weather Bureau.

Data for the adjacent area in Canada were provided by the Canadian Meteorological Division, and are based on a 20- to 40-year period.

Data from both sources in the United States and Canada have been sifted or reinterpreted in many localities to conform with recent more detailed information provided by State experiment stations and individual observers.

numerous individual cooperators.

HOW TO USE THE MAP

in zone of the map on the reverse side has been subdivided into darker-colored and lighter-colored sections that represent 5-degree differentials within the 10-degree zone. The lighter color of each zone represents the colder section; the darker color, the warmer section. The

The hardiness zones should be enough for most general reference

poses. However, plant survival differences can be noted at smaller scales, as shown in the following sections. When this additional

h-south progressions than a full zone represents. When this additional detail is needed, use the 5-degree differentials within the 10-degree

If additional detail is needed, use the 3-degree differentials within the 10-degree

Some examples of these differences are as follows: Saucer magnolia (*Magnolia soulangeana*) and wisteria (*Wisteria sinensis*) are suit-

¹ Based on studies conducted by a commission of the Society (formerly the American Horticultural Council) upon recommendation of the American Association of Nurserymen. Further background information may be found in an article in *The Geographic Charting of Plant Climatic Adaptability*, by H. T. Skinner, in the 15th International Horticultural Congress, 1958.

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